

1    What is claimed is:

1        1. A method of reducing photoelectric device leakage  
2    current caused by residual metal ions in conjugated polymer,  
3    comprising the steps of:

4            (i) providing a conjugated polymer material or a  
5            precursor thereof for a photoelectric device;  
6            (ii) forming a solution containing the conjugated  
7            polymer material or the precursor thereof, a  
8            chelating agent in an amount of from 0.01 to 50 wt%  
9            based on the weight of the conjugated polymer  
10          material or the precursor thereof, and a solvent,  
11          wherein the residual metal ions in the conjugated  
12          polymer material or the precursor thereof are  
13          chelated by the chelating agent; and  
14          (iii) forming the solution obtained from step (ii) into  
15          a film for the photoelectric device.

1        2. The method as claimed in claim 1, wherein the  
2    conjugated polymer material or the precursor thereof is an  
3    organic light emitting polymer material, an electron  
4    transferring polymer material, or a hole transferring polymer  
5    material.

1        3. The method as claimed in claim 2, wherein the  
2    conjugated polymer material is selected from the group  
3    consisting of polyphenylene vinylene, polyfluorene,  
4    derivatives thereof, precursors thereof, and combinations  
5    thereof.

1        4. The method as claimed in claim 3, wherein the  
2    conjugated polymer material is poly(2,3-dibutoxy-1,4-

3 phenylene vinylene), poly(9,9-dioctylfluorene), or a  
4 precursor thereof.

1 5. The method as claimed in claim 1, wherein the  
2 chelating agent is selected from the group consisting of  
3 aminophenols, sulfur compounds, crown ethers, salicylimines,  
4 and combinations thereof.

1 6. The method as claimed in claim 5, wherein the  
2 chelating agent is selected from the group consisting of 8-  
3 hydroxyquinoline, oxinesulfonic acid, tetraethylthiuram  
4 disulfide, tetramethylthiuram disulfide, dithiol, 2,3-  
5 dimercaptopropanol, thioglycolic acid, potassium ethyl  
6 xanthate, sodium diethyldithiocarbamate, dithizone, diethyl  
7 dithiophosphoric acid, thiourea, 12-crown-4, 15-crown-5, 18-  
8 crown-6, dibenzo-18-crown-6, N,N'-  
9 bis(salicylidene)ethylenediamine, and combinations thereof.

1 7. The method as claimed in claim 6, wherein the  
2 chelating agent is 18-crown-6, 8-hydroxyquinoline,  
3 tetraethylthiuram disulfide, or N,N'-  
4 bis(salicylidene)ethylenediamine.

1 8. The method as claimed in claim 1, wherein the film is  
2 used in organic light emitting diode devices, organic solar  
3 cell devices, organic transistor devices, organic laser  
4 devices, organic memory devices, organic resistor devices,  
5 organic capacitor devices, or organic inductor devices.

1 9. A conjugated polymer composition, comprising at least  
2 the following:

3 (a) a conjugated polymer or a precursor thereof, and

4 (b) a chelating agent in an amount from 0.01 to 50 wt%  
5 based on the weight of the conjugated polymer  
6 material or the precursor thereof.

1 10. The conjugated polymer composition as claimed in  
2 claim 9, wherein the conjugated polymer or a precursor  
3 thereof is an organic light emitting polymer, an electron  
4 transferring polymer, or a hole transferring polymer.

1 11. The conjugated polymer composition as claimed in  
2 claim 10, wherein the conjugated polymer is selected from the  
3 group consisting of polyphenylene vinylene, polyfluorene,  
4 derivatives thereof, precursors thereof, and combinations  
5 thereof.

1 12. The conjugated polymer composition as claimed in  
2 claim 3, wherein the conjugated polymer is poly(2,3-dibutoxy-  
3 1,4-phenylene vinylene), poly(9,9-dioctylfluorene), or a  
4 precursor thereof.

1 13. The conjugated polymer composition as claimed in  
2 claim 9, wherein the chelating agent is selected from the  
3 group consisting of aminophenols, sulfur compounds, crown  
4 ethers, salicylimines, and combinations thereof.

1 14. The conjugated polymer composition as claimed in  
2 claim 13, wherein the chelating agent is selected from the  
3 group consisting of 8-hydroxyquinoline, oxinesulfonic acid,  
4 tetraethylthiuram disulfide, tetramethylthiuram disulfide,  
5 dithiol, 2,3-dimercaptopropanol, thioglycolic acid, potassium  
6 ethyl xanthate, sodium diethyldithiocarbamate, dithizone,  
7 diethyl dithiophosphoric acid, thiourea, 12-crown-4, 15-

8       crown-5,           18-crown-6,           dibenzo-18-crown-6,           N,N'-  
9       bis(salicylidene)ethylenediamine, and combinations thereof.

1       15. The conjugated polymer composition as claimed in  
2       claim 14, wherein the chelating agent is 18-crown-6, 8-  
3       hydroxyquinoline, tetraethylthiuram disulfide, or N,N'-  
4       bis(salicylidene)ethylenediamine.

1       16. The conjugated polymer composition as claimed in  
2       claim 9, which is used in organic light emitting diode  
3       devices, organic solar cell devices, organic transistor  
4       devices, organic laser devices, organic memory devices,  
5       organic resistor devices, organic capacitor devices, or  
6       organic inductor devices.

1       17. The conjugated polymer composition as claimed in  
2       claim 9, further comprising a solvent.